RST TASKING ASSIGNMENT RECORD

TDD TYPE: Assessment

DATE: 07/08/15

START/COMPLETION DATE:
Assessment preparation Start Date: 07/08/15
Expected Completion Date: 08/31/15

TDD #:

TASK MONITORS: Eric M. Daly

SITE CODE: A23P **CERCLIS CODE:** NYD987001468

EPA SITE/PROJECT NAME: Canadian Radium and Uranium Corp

ADDRESS: 103-105 Kisco Avenue

CITY/STATE: Mt. Kisco, NY 10549
COUNTY: Westchester ; Block: , Lot:

ESTIMATE OF HOURS NEEDED: Approximately 300 hours

DESCRIPTION OF WORK:

- **Background**
  - From 1943 until approximately 1966, the CRU facility operations included the recovery of uranium and other radioactive elements from uranium-bearing sludge, old instrumentation, and watch dials. This work began as part of the federal government's Manhattan Engineering District (Manhattan Project).
  - In September 2013, WESTON performed an on-site reconnaissance and gamma radiation screening of the historic CRU property and other possible areas of contamination.
  - For detailed Site History, please refer to bottom of TDD.

- In accordance with the Assessment Activities Section in the SOW, RST 2 shall provide removal site assessment support and perform the following activities:
    - Provide **4 Technicians** to work with Site OSC in the planning and field phases of this assessment. This will include property ownership research, creation of the Quality Assurance Project Plan (QAPP)/Health & Safety Plan, site visits, radiological field survey, radon sampling and survey, map productions and attending technical meetings. Start date is **07/08/15.**
    - **1 Radon Specialist** to support the field aspect of the radiological assessment; specifically identifying the radon canister placement, placing the canisters, picking up the canisters and delivering to the laboratory for analysis.
    - Date of Mobilization: Tentative start date of **07/20/15**.

- **Tasks include:**
    - Assist in a ground radiological survey (Support EPA with gamma radiological survey utilizing the Fluke Pressurized Ionization Chamber **(Supplied by EPA)** and the Ludlum 2241**(Supplied by EPA).**
    - Perform Rad7 survey (Radon/Thoron). **Weston will need to obtain two Rad7 units.**
    - Obtain radon charcoal canisters and transport to analytical laboratory. Exact amount of radon canisters will need to be determined after site visit.
    - Soil collection and laboratory analysis.
    - Maintain site log
    - Photo-document site operations
    - Prepare health and safety plan **(Draft due 3 days after technical group meeting)**
    - Prepare site maps with designated survey points identified as well as sensitive areas **(due 7 days after completion of the assessment)**
    - Document on-site activities
    - Provide draft Assessment Report including all sampling results, survey results and observations 30 calendar days after completion of the assessment
    - Travel is authorized

- **Detailed Site History:**
    - From 1943 until approximately 1966, the CRU facility operations included the recovery of uranium and other radioactive elements from uranium-bearing sludge, old instrumentation, and watch dials. This work began as part of the federal government's Manhattan Engineering District (Manhattan Project).
    - From 1943 to the 1950s, the primary product was uranium; subsequently, radium became the principal product until the facility's closure. According to a Village of Mount Kisco memorandum, in 1957 CRU pleaded guilty to charges of allowing three employees to be overexposed to radiation.
    - From March 5, 1958 until sometime after May 19, 1961, decontamination procedures and expectations were established for the CRU facility.

- In November and December 1966, the facility buildings (a two-story concrete block building and two smaller one-story concrete block buildings) were decontaminated and demolished. Removal of radioactive dirt to a depth of 12 inches was required on the CRU premises. The most contaminated demolition materials were disposed of by Nuclear Diagnostic Laboratories located in Peekskill, New York, while the less contaminated materials were disposed of at Croton Point Sanitary Landfill located in Croton-on-Hudson, New York. After demolition and decontamination, a post-operation survey was conducted by Isotopes, Inc. Two locations on the Haggerty Millwork wall, which originally shared a wall with the CRU facility which was demolished during the 1966 demolition and decontamination process, were found above specifications. One contaminated location was removed by chiseling out the masonry of a wall. The second was a result of tailings from a leaking waste drum, which CRU had apparently stored on the second floor fire escape. Since contamination was low here, the area was sealed with 1 to 2 inches of mortar Railroad Avenue was constructed where the main CRU building once stood and was put in place by the urban renewal efforts in the area.
- Between 1964 (pre-demolition/decontamination) and 1971 (post-demolition/decontamination), the building layout of the site completely changed and it is believed that none of the original CRU facility buildings remained after the year 1971.
- On April 5, 1979, a local newspaper reported the 1957 death of the CRU plant manager due to leukemia and cited high radioactivity levels in his. On April 20, 1979, a survey was performed by the Assistant Commissioner of Health for Environmental Quality, Westchester Department of Health. Based on the surveys, the highest dose rates were found in a small portion of a locked, chain-link fenced area south of the old wood freight station on Railroad Avenue and east of the L. B. Richard's Lumber yard (i.e., an area located adjacent to the railroad). All other elevated dose rates were found in areas covered by soil and vegetative growth. The 1979 investigation reported that the high readings were obtained from an area covering approximately one square yard of the property in an area not used by the public; after the review of data, the report indicated that the dose rates found did not pose a public health hazard to the public passing the fenced area, to persons working in buildings adjacent to the area, or to persons living across the railroad tracks to the east.
- In a memorandum dated Feb 7, 1980, the Westchester County Health Department described investigation findings in more detail. The area in question was approximately 78 feet by 60 feet, enclosed by a chain-link fence located between the railroad tracks and a concrete paved area. The most significant contaminated area was a strip 15 feet by 5 feet, containing two separate "hot spots". A surface reading using an alpha probe survey meter measured 50 disintegrations per minute (dpm). Elevated readings several times above background were reported for an area extending about 50 feet south from the chain-link fence. The memorandum stated that the origin of this contamination was unknown and that it was not

discovered in previous surveys.

- In September 1993, the Bureau of Environmental Radiation Protection of the New York State Department of Health (NYSDOH) completed a survey of the CRU site; indoor radon measurements were collected (i.e., office, show room, storage/sale floor) which documented a maximum value of 9.8 pCi/L, and the average of the different detectors was about 8.1 pCi/L. NYSDOH also identified two outdoor areas where presence of radioactive materials were indicated the back of Richard's Lumber, and the road that runs next to the railroad tracks and adjacent to a fence post inside the fenced portion of what appeared to be Richard's Lumber property on the south side of Railroad Avenue.
- In 1994, EPA conducted an on-site inspection to measure radon levels, collect air and soil samples, and measure exposure rates. The purpose of the investigation was to determine if conditions required immediate action and if the site was eligible for long-term remediation under the federal Superfund Program. Elevated exposure rate measurements were observed on both the northern (10–700 microroentgens per hour [μR/hr]) and southern (10 –240 μR/hr) portions of the site property (Ref. 12, p. 13). Radium-226 (Ra-226) concentrations in soil samples taken from the top 1.5 feet ranged from 3 to 150 picocuries per gram (pCi/g). All of the radon measurements were below EPA's guideline (i.e., 4 picocuries per liter [pCi/L]) and the air samples collected at the site did not detect any suspension of radioactive contamination. EPA concluded that the site was not a potential candidate for inclusion in the National Priorities List and, therefore, was not eligible for long-term remediation.
- In July 1998, a complete radiological survey for Village of Mt. Kisco and Richard's Lumber (former CRU) was conducted by NYSDEC. The property owned by the Village of Mount Kisco (103 Kisco Avenue) was found to have contamination over one large unpaved area (about 4,000 to 5,000 ft2) and a few smaller areas. The 1998 report states that, on the Mt. Kisco property, the highest concentrations of radium observed were a few hundred pCi/g and that most of the contamination was in the top one foot of soil. The report stated that the distribution suggests that uranium-containing material was placed on the surface and then the area was leveled. A new road (Railroad Avenue) had been built where the CRU facility once stood; soil sampling completed near the road showed elevated radium a few feet below the surface. NYSDEC reported that the distribution of radioactive material near the road appeared to be consistent with movement of soil as part of the building demolition and subsequent construction of the road. Sampling beneath the road surface was not performed. There is no documentation of shielding or other control measures implemented on 103 Kisco Avenue property, though current conditions suggest the property was recently paved with asphalt (of an unknown depth) or other cover materials. The 1998 report further states that the survey of the Richard's Lumber (105 Kisco Avenue) property indicated that radioactive materials were present under the parking lot, but no samples were taken beneath the asphalt. The highest concentration of radium at

the site was found just north of Railroad Avenue (about 6,000 pCi/g). A large part of the main outside storage area was reported to be contaminated with radium near the surface as well as within some soil profiles to depths of about 4 feet. Survey data suggests that the contamination stopped abruptly at the edges of the paved areas. Railroad Avenue showed count rates that were lower than background soils; NYSDEC attributed these results to absorption by the road surface material (i.e., shielding). The July 1998 report indicated that radiation doses to workers or visitors to the site as it was used at the time were not significant. The site location where the dose rate was highest was a small area near Richard's Lumber, just north of Railroad Avenue. Time spent at this location is small; therefore, the accumulated dose was also estimated to be small. The July 1998 report suggested that significant radium contamination was present on both Mt. Kisco and Richard's Lumber properties. NYSDEC did not consider the site to be fully characterized at the completion of the survey.

- In September 2013, WESTON performed an on-site reconnaissance and gamma radiation screening of the historic CRU property and other possible areas of contamination. Background readings taken north and northeast of the site in the right-of-way (ROW) area alongside Kisco Avenue show background gamma radiation levels of approximately 7,500 counts per minute (CPM). The highest reading was located on the 105 Kisco Avenue property with a reading of 73,637 CPM (Ref. 2, Figure 3). Most readings were below 2 times (2x) background. There were three areas with readings that exceeded 2x background, ranging from 30,000 CPM to the maximum screening reading of 73,637 CPM (Ref. 2, Figure 3). All three areas above 2x background were located in the back portion of the 105 Kisco Avenue property, east of the historic CRU facility. No signs of ground discoloration were seen.
- Current site conditions for the 105 Kisco Avenue property, New York Stone and Masonry Supply, are normal for stone, masonry, and landscaping business and have not changed significantly since the 1998 report. The back portion of the property is where surplus materials are stored in corrals, separating different materials such as gravel, sand, wood chips, etc. The most southeastern portion of the property consists of a newly paved asphalt parking area for customers. Although the supporting documentation does not describe all redevelopment activities at the site, it is not believed that any of the current buildings were part of the original CRU facility. Materials and heavy machinery were present throughout the property, including the concrete corrals for materials. Many areas were unable to be screened due to obstructions (e.g., wood piles, heavy machinery, roll-offs). The current property owner did not allow WESTON to perform gamma level screenings inside the main building; however, the owner did allow WESTON to take outdoor gamma screening levels in outdoor sheds and other storage warehouse-type buildings.
- Current site conditions for the 103 Kisco Avenue property, Hickory Homes and Properties, Inc., are normal for a landscaping supply and material storage facility

The property is semi-paved (during the 1998 report, the property was not paved), and completely fenced with an access gate. The access gate is closed and locked when employees are not on site. There is one small work trailer located at the northernmost portion of the property which includes an employee break room, office, and reception area. Trucks, forklifts, and other heavy machinery were parked on the property. Various on-site roll-offs were filled with debris and materials. Cement corrals for materials are also located on-site. A manhole is located at the northeast corner of the site, although no elevated gamma screenings were detected. Many areas were unable to be screened due to obstructions (e.g., wood piles, heavy machinery, roll-offs).

- There were no elevated screening readings on the 103 Kisco Avenue. Gamma screenings of Railroad Avenue and the ROW area bordering Railroad Avenue showed gamma screening readings ranging from background (~7,500 CPM) to 15,000 CPM, with one elevated area located at the corner of the 105 Kisco Avenue property, which had readings ranging from 15,000 CPM to 30,000 CPM.